

METHODS OF FORMING A SEMICONDUCTOR DEVICE HAVING A METAL GATE ELECTRODE AND ASSOCIATED DEVICES

Abstract of the Disclosure

5 Methods of forming a semiconductor device having a metal gate electrode
include sequentially forming a gate insulator, a gate polysilicon layer and a metal-gate
layer on a semiconductor substrate. The metal-gate layer and the gate polysilicon
layer are sequentially patterned to form a gate pattern comprising a stacked gate
polysilicon pattern and a metal-gate pattern. An oxidation barrier layer is formed to
10 cover at least a portion of a sidewall of the metal-gate pattern.